

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)	
)	
Amendment of Rules Governing Ultra-)	RM-11844
Wideband Devices and Systems)	

REPLY COMMENTS OF AVIATION SPECTRUM RESOURCES, INC.

Aviation Spectrum Resources, Inc. (“ASRI”), by its attorney, hereby files these reply comments on the Bosch Petition for Rulemaking in the above captioned matter (“*Bosch Petition*”).¹

ASRI is the communications company of the U.S. commercial aviation industry and is owned by the airlines and other airspace users. As sponsor of the Aeronautical Frequency Committee (“AFC”),² ASRI brings together expertise and opinions from across the aviation sector to promote the safe and effective operation of commercial aviation radio communications and navigation systems in use within the United States, including critical applications supported by the Global Positioning System (“GPS”).

¹ See *In the Matter of Amendment of Rules Governing Ultra-Wideband Devices and Systems*, Petition for Rulemaking of Robert Bosch LLC, RM 11844 (filed June 18, 2019) (“*Bosch Petition*”); see also Public Notice, Consumer & Governmental Affairs Bureau Reference Information Center, *Petitions for Rulemakings Filed*, Report No. 3130, RM-11844 (rel. July 18, 2019) (establishing, in conjunction with the Commission’s rules, a due date of September 3, 2019, for reply comments).

² AFC membership includes: Airline and Pilots Association, Airlines for America, Alaska Airlines, American Airlines, Aircraft Owners and Pilots Association, ASRI, Boeing Corporation, Bristow Helicopters, Chevron, Collins Aerospace, Delta Airlines, Era Helicopters, Federal Aviation Administration, Federal Express, Frontier Airlines, Harris Corporation, Helicopter Association International, Helicopter Safety Advisory Conference, International Air Transport Association, JetBlue Airways, National Air Transportation Association, PHI, Inc., Société Internationale de Telecommunications Aeronautique, Southwest Airlines, United Airlines, and United Parcel Service.

ASRI actively continues to review the issues raised by proposals in the *Bosch Petition* to relax the Commission’s ultra-wideband (“UWB”) regulatory framework. ASRI’s predecessor, ARINC, was extensively involved in the Commission’s UWB proceeding which led to the current rules, almost two decades ago, protecting the interest of aviation to operate free from in-band and out-of-band harmful interference over the many radiofrequency bands in which UWB devices might operate, including safety-of-life restricted bands used by aviation. ASRI is regularly involved in the difficult task of investigating interference events experienced by aviation systems. It is frequently challenging to identify and pinpoint low-power sources of interference, many of which can be caused by unlicensed devices operating under Part 15 of the Commission’s rules, such as UWB devices or LED lighting. Indeed, at this time, some interference sources which ASRI is attempting to resolve concern suspected Part 15 devices at airports, which are inhibiting aircraft datalinks used for Air Traffic Control and other safety communications.³

ASRI shares the concerns of the GPS Innovation Alliance (“GPSIA”) about the possible unwinding of the fundamental interference protections embodied in the UWB framework. The potential threats to aviation safety from UWB devices, and unlicensed devices generally, merit a conservative approach and the maintenance of strict requirements absent clear demonstrations in support of waivers in particular contexts or generic rule adjustments. The *Bosch Petition* and the several comments filed in support of it are short on studies, data, and analysis that the relaxed rules allowing for the expanded UWB deployments they envision will not pose an increased threat of harmful interference to authorized services, including safety-of-life aviation services.

³ See email from ASRI to FCC Enforcement Bureau, Regional Field Office, Region Three (Oct. 17, 2018) (submitting interference report).

ASRI wishes to emphasize that the mere fact that the Commission wisely undertook a conservative approach to UWB devices when adopting rules almost two decades ago, a fact many proponents point to as a basis for change today, does not justify any particular change at this time, let alone a whole host of relaxations as sought by the *Bosch Petition*.

At most, the careful methods employed in the early 2000's might be the basis for equally careful reconsideration were proponents to first do the groundwork and submit detailed studies and analyses of why certain changes would not materially increase the potential for harmful interference to incumbent services and applications. Sound spectrum management policy demands that proponents of unlicensed UWB devices, which no one contests must be operated on a non-interference basis, have the burden to demonstrate that any relaxation of the rules will not pose an unacceptable threat of harmful interference. The proponents of UWB rule changes have not as of yet met that burden. That documented interference events under the current framework may be few, as UWB proponents claim, does not merit a relaxation of the rules. As GPSIA notes, an absence of confirmed interference events caused by UWB devices is nothing more than an indication that the current framework is working.⁴ Nothing more can be inferred.

Furthermore, commenters filing in support of the *Bosch Petition* seem to suggest that relaxation of the rules is in order because of the many potential applications that would be possible under a relaxed regulatory regime. While fewer constraints may create more opportunities for UWB devices, Part 15 unlicensed devices, such as UWB equipment, do not act in a vacuum, and the new devices and applications that may be facilitated cannot warrant a softening of the protections afforded to higher-priority incumbent licensed services. That would turn the country's spectrum management system on its head. Moreover, it is beyond dispute that

⁴ Opposition of GPSIA, RM-11844, at 6-7 (Aug. 19, 2019).

GPS plays an important and increasing role in supporting safe and efficient aviation operations, with wide and increasing use of certified aviation GPS systems as well as non-certified systems.⁵ The Commission must ensure that any changes to the UWB devices do not increase the threat of interference to incumbent licensed operations and GPS, for example by increasing the noise floor through out-of-band emissions. While protection of such services and applications may be a nuisance in some contexts to UWB proponents, it is a reality with which they have to deal.

Moreover, the commenters filing in support of the *Bosch Petition*, despite their broad sweeping statements lacking specifics, contend that waivers that have been granted in the certification of a number of UWB devices support the propriety of relaxing the rules. Action on this basis would be unjustified. As the IEEE 802 LAN/MAN Standards Committee (“LMSC”) explains in its comments, “UWB has been widely used.”⁶ This success has been achieved, by and large, pursuant to the existing rules, not through waivers. The number of waivers have been few, as GPSIA documents.⁷ Further, waivers have been granted for specific UWB devices which are developed for operation in particular settings. The mere fact that a waiver has been

⁵ See, e.g., Letter of Edward A. Yorkgitis, Jr., Kelley Drye & Warren, LLP, counsel for ASRI, to Marlene H. Dortch, Secretary, FCC, filed in IB Docket Nos. 11-109 and 12-340; IBFS File Nos. SES-MOD-20151231-00981, SAT-MOD-20151231-00090, and SAT-MOD-20151231-00091; RM-11681 (Aug. 17, 2016); *id.*, Attachment at 2-4 (discussing aviation reliance on GPS and the need for protection of both certified and non-certified and uncertified aviation GPS receivers).

⁶ LMSC, *ex parte* of IEEE 802, filed in RM-11944, at 3 (Aug. 19, 2019) (“LMSC Comments”). *Accord* Comments of Alteros, Inc., filed in RM 11844, at 4 (Aug. 19, 2019) (the past sixteen years has produced “UWB device deployment across a wide array of highly beneficial uses”).

⁷ Opposition of GPSIA at 7, n. 16 (fewer than a dozen of the 442 certifications for UWB devices – or clearly under 3% – have sought and received waivers).

made available in a specific context does not warrant relaxation of the rules in all contexts to “permit a wide range of industrial and commercial products” in the singular waiver’s wake.⁸

In addition, the record in support of the *Bosch Petition* is filled with contradictions. On the one hand, InnoTec21 GmbH, for example, implies that any increased potential for interference from the proposed changes to the rules can be addressed by introducing interference mitigation measures,⁹ yet the entire purpose of the *Bosch Petition* is to eliminate codified interference protections imposed on UWB devices today, as GPSIA makes clear.¹⁰ The notion that users of UWB devices can be relied upon to implement sufficient interference mitigation measures as a trade off to relaxing the UWB rules is unsatisfactory given that unlicensed UWB devices are not coordinated as radio stations in many cases as a condition to operation.

ASRI continues to examine the requested changes raised in the *Bosch Petition* with AFC members, including communications service providers to the aviation industry, for potential

⁸ Thus, for example, the grant of a waiver for one type of fixed UWB device in conjunction with mobile devices does not justify an across-the-board relaxation of the rules to permit the use of fixed UWB devices in outdoor locations for an unlimited number of applications, as LMSC contends. *See* LMSC Comments at 3.

⁹ Comments of InnoTec21 GmbH, filed in RM 11844, at 2 (Aug. 16, 2019) (“IM are not yet taken into account in the UWB rules. Thus the flexibility offered by modern UWB systems to implement IM techniques and specific scenario determined IM factors are not taken into account.”). In any event, the complete lack of details regarding any interference mitigation techniques that InnoTec21 GmbH has in mind to offset rule changes makes it impossible to determine if they would be sufficient, let alone whether they could be reliably implemented and practically enforced. The *Bosch Petition* itself, while discussing generally the concept of interference mitigation measures that theoretically could be implemented in a theoretical example UWB deployment (*e.g.*, down-tiles antennas, ancillary sensors in other devices, shielding) “as necessary,” does not explain how such deployment-specific measures could be successfully implemented in an unlicensed regulatory framework to ensure a compliant non-interfering operation, let alone enforced. *See, e.g., Bosch Petition* at 35-36.

¹⁰ *See, e.g., GPSIA Comments* at 16-17 (discussing the expansive Material Sensing Device category urged in the *Bosch Petition*, which would dispense with a number of restrictions on UWB devices that maximize interference protection to authorized services).

impacts on aviation services, applications, and operations – most importantly the safety of aviation. But, while that review is ongoing, proponents of the *Bosch Petition* should be encouraged, indeed required, to back up their call for changes with detailed analysis and testing before the Commission can seriously entertain the rule modifications they champion. As Alteros observes in its comments, numerous “carefully conducted studies” preceded the adoption of the current UWB regulatory framework, which were “required to protect incumbent services.”¹¹ Licensees of potentially affected authorized services do not have the burden of rebutting the unstated justifications for changes to the UWB rules.

In sum, before a rulemaking to consider the proposed rule changes should be seriously contemplated, ASRI urges the development of a better record by proponents of the *Bosch Petition*. Alteros, a proponent of the *Bosch Petition*, underscores that “careful study, consideration, and caution are required as we move forward.”¹² In that vein, Commission should urge proponents to undertake studies and analyses to examine whether, in fact, there would be the minimal increased potential for harmful interference to authorized service and critical incumbent applications, including safety-of-life aviation operations, that proponents claim. This should be done now, before the Commission considers any rule changes to the UWB framework.

¹¹ Comments of Alteros at 3.

¹² *Id.* at 4.

The mere fact that the Commission took a conservative approach two decades ago is not reason enough for the proposed relaxation of the rules today.

Respectfully submitted,

**AVIATION SPECTRUM RESOURCES,
INC.**

A handwritten signature in black ink, appearing to read "E. Yorkgitis, Jr.", followed by a horizontal line.

Andrew C. Roy
Director of Engineering
Aviation Spectrum Resources, Inc.
180 Admiral Cochrane Drive, Suite 300
Annapolis, MD 21401

Edward A. Yorkgitis, Jr.
Kelley Drye & Warren LLP
3050 K Street, NW
Washington, DC 20007
(202) 342-8540

Its counsel

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CERTIFICATE OF SERVICE

I, J. Bradford Currier, hereby certify that on September 3, 2019, a copy of the forgoing Reply Comments of Aviation Spectrum Resources, Inc. was served by mail and/or email on the following:

Ana Meuwissen Director Federal Government Affairs Robert Bosch LLC 1455 Pennsylvania Avenue, N.W. Suite 755 Washington, DC 20004	Christopher D. Imlay Booth, Freret & Imlay, LLC 14356 Cape May Road Silver Spring, MD 20904 Counsel to Robert Bosch LLC
J. David Grossman Executive Director GPS Innovation Alliance 1800 M Street, NW Suite 800N Washington, DC 20036	Ross Slutsky Morgan, Lewis & Bockius LLP 1111 Pennsylvania Avenue, N.W. Washington, DC 20004 Counsel to GPS Innovation Alliance
Paul Nikolich Chair IEEE 802 LAN/MAN Standards Committee IEEE802radioreg@ieee.org	Jacquelynn A. Green President, CTO Alteros, Inc. 1100 Campus Dr., Suite 200 Stow, OH 44224
Dr. Sven Zeisberg InnoTec21 GmbH Gohliser Str. 13, 04105 Leipzig, Germany	Peter T. Lewis President & CEO Vortezon, Inc. 5636 Connecticut Ave, N.W. No. 6300 Washington, DC 20015
Brian D. Weimer Eamon Tierney Sheppard Mullin Richter & Hampton LLP 2099 Pennsylvania Ave. N.W., Suite 100 Washington, DC 20006 Counsel to Piper Networks, Inc.	Naftali Chayat Chief Technical Officer Vayyar Imaging Ltd. naftali.chayat@vayyar.com
Dag T. Wisland Chief Technical Officer Novelda dag@novelda.no	Erik Mademann CEO ZIGPOS GmbH Räcknitzhöhe 35a, 01217 Dresden, Germany
Michael McLaughlin Chief Technical Officer Decawave Inc. michael.mclaughlin@decawave.com	Tim Harrington Chairman and Executive Director UWB Alliance 22156 Old Santa Cruz Highway Los Gatos, CA 95033



J. Bradford Currier
Kelley Drye & Warren LLP
3050 K Street, NW
Washington, DC 20007
(202) 342-8465